AMENDMENTS TO THE SPECIFICATION

IN THE SPECIFICATION:

Page 4

Please amend the paragraph page 4 beginning at line 10 as follows:

There is also proposed the following different method. In this different method, one radio unit serves as a master, and if a broad transmission band is necessary for video transmission or the like, a sub radio unit corresponding to a channel allocated in advance is operated as a slave. The master transmits and receives a control signal for a plurality of radio units to acquire a radio channel access right, whereby the radio units transmit and receive IP packets. This method has, however, the following problem similarly to the above method. When the radio units use different modulation schemes or the allocated IP packets have different sizes, because the allocation to the radio units is carried out in IP packet units, on one hand, reception cannot be performed even if a radio unit has completed transmission, if another radio unit has not completed transmission. On the other hand, a terminal receiving IP packets cannot perform transmission even if a radio unit has completed ~~transmission~~ reception, if another radio unit has not completed ~~transmission~~ reception. As a result, the radio band cannot be efficiently used.

Page 5

Please amend the paragraph page 5 beginning at line 4 as follows:

A base station (or a radio terminal) according to the present invention, being an apparatus

for ~~that constitutes~~ a wireless LAN system realizing band-widening using a plurality of communication channels, includes: a plurality of physical layers corresponding to the plurality of communication channels, and each that transmits and receives a radio signal conforming to an IEEE 802.11 standard using a corresponding communication channel; and a media access control (MAC) layer. The MAC layer, when transmitting, divides an entire data frame conforming to the IEEE 802.11 standard from a head of the data frame, in accordance with a transmission rate of each physical layer, and allots the divided data frame to the physical layers so that burst times of the communications channels are substantially equal, and when receiving, combines data frames received via a plurality of communication channels through operations opposite to those performed when transmitting.

According to the present invention, for example, a radio signal according to the IEEE 802.11a standard, the IEEE 802.11b standard, the IEEE 802.11g standard, or the like is allotted to a plurality of communication channels to be transmitted to a home/office wireless network. A MAC layer sets the entire frame as a division target, and allots the frame divisions to the respective physical layers.

Page 7

Please amend the paragraph page 7 beginning at line 5 as follows:

The base station 1 includes a communication unit system 11 that terminates a wired or wireless access line connecting to an access network, and that transmits reception information from the access network to specific radio terminals 2A, 2B, ..., through a wireless network in a home/office. This communication unit system 11 includes an access terminal ~~system terminating~~

unit 13 that terminates the access line, a signal interface unit 14 (corresponding to, for example, a router or a bridge) that controls a mutual conversion signal formats between a signal of the access network and signals of the radio terminals 2A, 2B, ..., a broadband radio unit 15 that transmits and receives a radio signal according to the IEEE 802.11a standard, the IEEE 802.11b standard, the IEEE 802.11g standard, or the like to and from the wireless network in the home/office through a plurality of channels, and antennas 12-1, 12-2, ... While a plurality of antennas are connected to the broadband radio unit 15 in this embodiment, the number of antennas may be one.

Page 8

Please amend the paragraph page 8 beginning at line 18 as follows:

Fig. 2 is an illustration of a configuration of the broadband radio units 15 and 25 according to this embodiment. Each of the broadband radio units 15, 25A, and 25B (the units 25A and 25B correspond to the unit 25 shown in Fig. 2) includes a host interface unit (Host Interface) 33 for connecting the broadband radio unit 15, 25A or 25B to the signal interface unit 14 or the terminal interface unit 24A or 24B, a media access control (MAC) layer 32 according to the IEEE 802.11 standard (a, b, e, f, g, h, i, or the like) and expanded to satisfy this embodiment, and a plurality of physical layers (PHYs) 31 (corresponding to PHYs 31-1, 31-2, 31-3, ...) operating with a plurality of different channels conforming to the IEEE 802.11a standard, the IEEE 802.11b standard, IEEE 802.11g standard, or the like.

Page 10

Please amend the paragraph page 10 beginning at line 9 as follows:

Operations of the radio communication system will next be explained. Fig. 3 is an illustration of a data frame format according to the IEEE 802.11a standard and Fig. 4 is an illustration of a frame format when a plurality of channels (three channels) are used. Figs. 3 and 4 indicate that if a frame is allotted to a plurality of channels to be transmitted, the burst times of the channels are equal. It is noted that data bits per OFDM symbol (N_{DBPS}) is specified in the IEEE 802.11a standard and indicates a number of data bits that can be transmitted per OFDM symbol. In this embodiment, for convenience of explanation only, a number of octets that can be transmitted per OFDM symbol is defined as data octets per OFDM symbol (N_{DOPS}). That is, N_{DOPS} equals $N_{DBPS}/8$.

Page 11

Please amend the paragraph page 11 beginning at line 7 as follows:

In this embodiment, all of the MAC header 41, the LLC header/SNAP header 42, the Frame Body 43, and the FCS 44 specified by an IEEE 802.11 standard are a target of the division. As shown in Fig. 5, the MPDU 40 is divided from a head of the MPDU 40 in units of N_{DOPS} according to transmission rates of the respective physical layers 31-1, 31-2, and 31-3 (divisions corresponding to an MAC header 41-1, an LLC header/SNAP header 42-2, frame bodies 43-1, 43-2, and 43-3, and an FCS 44-2 shown in Fig. 4) into divisions. Each physical layer receives a unit of data, which can be transmitted with one OFDM symbol. Fig. 5 is an illustration of a method for dividing/allotting the MPDU 40. In Fig. 4, therefore, the OFDM signals 50-1, 50-2, and 50-3 on the respective physical layers have burst times that are

substantially equal.

Page 12

Please amend the paragraph page 12 beginning at line 29 as follows:

A number of OFDM symbols N required for transmission of the MPDU is represented by the following Equation (1), where, for example, a size of the MPDU including the MAC header, the LLC header, the SNAP header, the frame body, and the FCS is L [octets], the transmission rates of the respective channels are RATE (a), RATE (b), and RATE (c) [megabits per second], the numbers of octets per OFDM symbol in the respective channels are N_{DOPS} (a), N_{DOPS} (b), and N_{DOPS} (c) [octets], and the number of channels is k.

Page 16

Please amend the paragraph page 16 beginning at line 33 as follows:

As described above, according to this embodiment, the radio signal conforming to the IEEE 802.11a standard, the IEEE 802.11b standard, the IEEE 802.11g standard, or the like is allotted to the plurality of communication channels to be transmitted to the home/office wireless network. Here, the MAC divides the entire frame as the division target, and allots the frame divisions to the physical layers. It is thereby possible to efficiently utilize the radio band, and thus greatly improve the throughput, as compared with the conventional techniques. Furthermore, since the existing physical layers according to the IEEE 802.11a, IEEE 802.11b, and IEEE 802.11g standards can be used, backward compatibility with respect to the existing

systems can be maintained. The operations according to this embodiment are also applicable to ~~a~~ MIMO systems spatially having a plurality of channels.

Page 18

Please amend the paragraph page 18 beginning at line 3 as follows:

In this embodiment, the data frame MPDU 40 to be transmitted includes a MAC header 41, an LLC header/SNAP header 42, a frame body 43, and an FCS 44, which are specified by an IEEE 802.11 standard. The LLC header/SNAP header 42, the frame body 43, and the FCS 44 are a target of division are divided from the head in units of N_{DOPS} according to transmission rates of respective physical layers 31-1, 31-2, and 31-3 into divisions(corresponding to an LLC header/SNAP header 42-1, frame bodies 43-1, 43-2, and 43-3, and an FCS 44-2 shown in Fig. 7). The divisions are fed to the physical layers in units data that can be transmitted per OFDM symbol. In Fig. 7, therefore, OFDM signals 50-1, 50-2, and 50-3 in the respective physical layers have burst times which are substantially equal.

Please amend the paragraph page 18 beginning at line 26 as follows:

A number of OFDM symbols N required for transmission of the MPDU is calculated as illustrated in Fig. 8, where, for example, a size of the MPDU including the LLC header, the SNAP header, the frame body, and the FCS is L [octets], the transmission rates in the respective channels are RATE (a), RATE (b), and RATE (c) [megabits per second], numbers of octets transmitted per OFDM symbol in the respective channels are N_{DOPS} (a), N_{DOPS} (b), and N_{DOPS} (c) [octets], and the number of channels is k.

Page 22

Please amend the paragraph page 22 beginning at line 18 as follows:

As described above, according to this embodiment, the radio signal conforming to the IEEE 802.11a standard, the IEEE 802.11b standard, the IEEE 802.11g standard, or the like is allotted to the plurality of communication channels to be transmitted to the home/office wireless network. Here, the MAC sets the part of the frame as the division target, adds the rest of the frame to the divided frame divisions, and allots the added frame divisions to the physical layers. It is thereby possible to efficiently utilize the radio band, and thus greatly improve the throughput, as compared with the conventional techniques. Furthermore, since the existing physical layers conforming to the IEEE 802.11a, IEEE 802.11b, and IEEE 802.11g standards can be used, backward compatibility with respect to the existing systems can be maintained. The operations according to this embodiment are also applicable to ~~a~~ MIMO systems spatially having a plurality of channels.